General

Guideline Title

Evaluation and management of small-bowel obstruction: an Eastern Association for the Surgery of Trauma practice management guideline.

Bibliographic Source(s)

Maung AA, Johnson DC, Piper GL, Barbosa RR, Rowell SE, Bokhari F, Collins JN, Gordon JR, Ra JH, Kerwin AJ, Eastern Association for the Surgery of Trauma. Evaluation and management of small-bowel obstruction: an Eastern Association for the Surgery of Trauma practice management guideline. J Trauma Acute Care Surg. 2012 Nov;73(5 Suppl 4):S362-9. [160 references] PubMed

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: EAST Practice Parameter Workgroup for Management of Small Bowel Obstruction. Practice management guidelines for small bowel obstruction. Chicago (IL): Eastern Association for the Surgery of Trauma (EAST); 2007. 42 p. [80 references]

Recommendations

Major Recommendations

The levels of recommendation (1-3) and classification of evidence (I-III) are defined at the end of the "Major Recommendations" field.

Diagnosis

1. Computed tomographic (CT) scan of abdomen and pelvis should be considered in all patients with small-bowel obstruction (SBO) because it can provide incremental information over plain films in differentiating grade, severity, and etiology of SBOs that may lead to changes in management. Level 1.
2. Water-soluble contrast study should be considered in patients who fail to improve after 48 hours of nonoperative management because a normal contrast study can rule out operative SBO. Level 2.
3. If available, multidetector CT scanner and multiplanar reconstruction should be used because they aid in the diagnosis and localization of SBOs. Level 3.
4. Magnetic resonance imaging (MRI) and ultrasound are potential alternatives to computed tomography but may have several logistical limitations. Level 3.
5. CT scan should be considered to aid in the diagnosis of small-bowel volvulus. Findings include multiple transition points, posterior location, and the "whirl" sign. Level 3.

Management

1. Patients with SBO and generalized peritonitis on physical examination or with other evidence of clinical deterioration such as fever, leukocytosis, tachycardia, metabolic acidosis, and continuous pain should undergo timely surgical exploration. Level 1.
2. Patients without the previously mentioned clinical picture can safely undergo initial nonoperative management for both partial and complete SBO, although complete obstruction has a higher level of failure. Level 1.
3. CT findings consistent with bowel ischemia should suggest a low threshold for operative intervention. Level 2.
4. Laparoscopic treatment of SBO is a viable alternative to laparotomy in selected cases. When successful, it may be associated with decreased morbidity and a shorter length of stay. Level 2.
5. Water-soluble contrast should be considered in the setting of partial SBO that has not resolved in 48 hours because it can improve bowel function (time to bowel movement), decrease length of stay, and is both therapeutic and diagnostic. Level 2.
6. Patients without resolution of the SBO by days 3 to 5 of nonoperative management should undergo water-soluble contrast study or surgery. Level 3.
7. Patients with SBO should generally be admitted to a surgical service because this has been shown to be associated with a shorter length of stay, less hospital charges, and lower mortality compared with admission to a medical service. Level 3.

Definitions:

Classes of Evidence

Class I: Prospective, randomized, controlled trials

Class II: Clinical studies in which data were collected prospectively and retrospective analyses that were based on clearly reliable data. Types of studies so classified include observational studies, cohort studies, prevalence studies, and case-control studies.

Class III: Studies based on retrospectively collected data. Evidence used in this class includes clinical series, database or registry review, large series of case reviews, and expert opinion.

Levels of Recommendation

Level 1: The recommendation is convincingly justifiable based on the available scientific information alone. This recommendation is usually based on Class I data, however, strong Class II evidence may form the basis for a Level I recommendation, especially if the issue does not lend itself to testing in a randomized format. Conversely, low quality or contradictory Class I data may not be able to support a Level I recommendation.

Level 2: The recommendation is reasonably justifiable by available scientific evidence and strongly supported by expert opinion. This recommendation is usually supported by Class II data or a preponderance of Class III evidence.

Level 3: The recommendation is supported by available data but adequate scientific evidence is lacking. This recommendation is generally supported by Class III data. This type of recommendation is useful for educational purposes and in guiding future clinical research.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Small bowel obstruction

Guideline Category

Diagnosis

Management

Treatment

Clinical Specialty

Critical Care

Emergency Medicine

Family Practice

Gastroenterology

Internal Medicine

Surgery

Intended Users

Advanced Practice Nurses

Nurses

Physician Assistants

Physicians

Guideline Objective(s)

- To provide up-to-date evidence-based recommendations for small-bowel obstruction (SBO)
- To revise and expand on the Eastern Association for the Surgery of Trauma (EAST) 2007 recommendations

Target Population

Adults and children with small bowel obstruction

Interventions and Practices Considered

Diagnosis/Management

1. History and physical examination
2. Plain radiography
3. Computed tomography (CT) scan of abdomen and pelvis
4. Magnetic resonance imaging (MRI) and ultrasound
5. Contrast studies and enteroclysis (water-soluble contrast)
6. Operative management
7. Nonoperative management
8. Laparoscopy
9. Adjuncts
    - Antibiotics
    - Prevention

Major Outcomes Considered

- Sensitivity and specificity of diagnostic imaging
- Success rate of treatment
- Morbidity and mortality rates

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

A computerized search of the National Library of Medicine MEDLINE database was undertaken using the Entrez interface for English language citations during the period of 2007 through 2011 using the primary search strategy:

> intestinal obstruction[mh] AND intestine, small[mh] AND humans[mh] NOT (case reports[pt] OR letter[pt] OR comment[pt] OR news[pt])

The primary search identified 259 articles that met our criteria. After the exclusion of review and pediatric and inflammatory bowel disease articles, 53 new articles were identified. These articles detailed both prospective and retrospective studies examining adult patients with suspected or proven SBO. These articles were added to the 131 previous studies reviewed in the 2007 practice management guidelines (see the Appendix in the "Availability of Companion Documents" field).

Number of Source Documents

53 new articles were identified and added to the 131 previous studies reviewed in the 2007 practice management guidelines.

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Class I: Prospective, randomized, controlled trials.

Class II: Clinical studies in which the data were collected prospectively or retrospective analyses that were based on clearly reliable data. Types of studies so classified include observational studies, cohort studies, prevalence studies, and case-control studies.

Class III: Studies based on retrospectively collected data. Evidence used in this class includes clinical series, database or registry review, large series of case reviews, and expert opinion.

Methods Used to Analyze the Evidence

Review of Published Meta-Analyses

Systematic Review

Description of the Methods Used to Analyze the Evidence

Each article was reviewed and graded according to the level of evidence by at least two surgeons.

Articles were classified as Class I, II, or III as described in the Eastern Association for the Surgery of Trauma (EAST) "Utilizing evidence based outcome measures to develop practice management guidelines: a primer" (see the "Availability of Companion Documents" field).

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

All authors participated in the development of the recommendations. Recommendations were classified as level 1, 2, or 3 according to the definitions listed in the "Rating Scheme for the Strength of the Recommendations" field.

Rating Scheme for the Strength of the Recommendations

Level 1: The recommendation is convincingly justifiable based on the available scientific information alone. This recommendation is usually based on Class I data, however, strong Class II evidence may form the basis for a Level I recommendation, especially if the issue does not lend itself to testing in a randomized format. Conversely, low quality or contradictory Class I data may not be able to support a Level I recommendation.

Level 2: The recommendation is reasonably justifiable by available scientific evidence and strongly supported by expert opinion. This recommendation is usually supported by Class II data or a preponderance of Class III evidence.

Level 3: The recommendation is supported by available data but adequate scientific evidence is lacking. This recommendation is generally supported by Class III data. This type of recommendation is useful for educational purposes and in guiding future clinical research.

Cost Analysis

The guideline developers reviewed published cost analyses.

Method of Guideline Validation

Internal Peer Review

Description of Method of Guideline Validation

This update to the practice management guidelines was developed, presented, and discussed at the 2012 Eastern Association for the Surgery of Trauma (EAST) Annual Meeting. All authors participated in critical revisions.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Appropriate evaluation and management of patients with small bowel obstruction

Potential Harms

Complications related to management/treatment

Qualifying Statements

Qualifying Statements

- The Eastern Association for the Surgery of Trauma (EAST) is a multi-disciplinary professional society committed to improving the care of injured patients. The Ad hoc Committee for Practice Management Guideline Development of EAST develops and disseminates evidence-based information to increase the scientific knowledge needed to enhance patient and clinical decision-making, improve health care quality, and promote efficiency in the organization of public and private systems of health care delivery. Unless specifically stated otherwise, the opinions expressed and statements made in this publication reflect the authors' personal observations and do not imply endorsement by nor official policy of the Eastern Association for the Surgery of Trauma.
- "Clinical practice guidelines are systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances."* These guidelines are not fixed protocols that must be followed, but are intended for health care professionals and providers to consider. While they identify and describe generally recommended courses of intervention, they are not presented as a substitute for the advice of a physician or other knowledgeable health care professional or provider. Individual patients may require different treatments from those specified in a given guideline. Guidelines are not entirely inclusive or exclusive of all methods of reasonable care that can obtain/produce the same results. While guidelines can be written that take into account variations in clinical settings, resources, or common patient characteristics, they cannot address the unique needs of each patient nor the combination of resources available to a particular community or health care professional or provider. Deviations from clinical practice guidelines may be justified by individual circumstances. Thus, guidelines must be applied based on individual patient needs using professional judgment.

*Institute of Medicine. Clinical practice guidelines: directions for a new program. MJ Field and KN Lohr (eds) Washington, DC: National Academy Press. 1990: pg 39.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

IOM Domain

Effectiveness

Identifying Information and Availability

Bibliographic Source(s)

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Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2007 (revised 2012 Nov)

Guideline Developer(s)

Eastern Association for the Surgery of Trauma - Professional Association

Source(s) of Funding

Eastern Association for the Surgery of Trauma (EAST)

Guideline Committee

EAST Practice Management Guidelines Committee

Composition of Group That Authored the Guideline

Authors: Adrian A. Maung, MD; Dirk C. Johnson, MD; Greta L. Piper, MD; Ronald R. Barbosa, MD; Susan E. Rowell, MD; Faran Bokhari, MD; Jay N. Collins, MD; Joseph R. Gordon, MD; Jin H. Ra, MD; Andrew J. Kerwin, MD

Financial Disclosures/Conflicts of Interest

The authors declare no conflicts of interest.

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Guideline Availability

Electronic copies: Available from the Eastern Association for the Surgery of Trauma (EAST) Web site .

Print copies: Available from the Eastern Association for the Surgery of Trauma Guidelines, c/o Adrian Anthony Maung, MD, Department of Surgery, Section of Trauma, Surgical Critical Care, and Surgical Emergencies, Yale University School of Medicine, 330 Cedar Street (BB-310), New Haven, CT 06520; email: adrian.maung@yale.edu.

Availability of Companion Documents

The following is available:

- Utilizing evidence based outcome measures to develop practice management guidelines: a primer. 2000. 18 p. Available in Portable Document Format (PDF) from the Eastern Association for the Surgery of Trauma (EAST) Web site .

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI Institute on September 12, 2008. This NGC summary was updated by ECRI Institute on May 8, 2013.

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